

Chemicals

in Sportfish and Game

2006 - 07 Health Advisories



New York State Department of Health

Bob Hines

CONTENTS

| | |
|--|------------------|
| 2006-2007 Health Advisories: Chemicals in Sportfish and Game | 1 |
| Purpose and Rationale | 1 |
| Health Risks from Contaminants in Fish and Game | 1 |
| Procedures for Setting Advisories | 1 |
| Advice on Contaminants in Fish | 2 |
| General Advisory for Eating Sportfish | 2 |
| Specific Advisories | 2 |
| Advisories for Women, Infants and Children | 2 |
| Spacing Fish Meals | 3 |
| DOH Advisories for Marine Waters | 3 |
| Cleaning and Cooking Your Fish | 4 |
| Reducing Exposure to Chemical Contaminants From Fish and Shellfish | 4 |
| Advice on Contaminants in Game | 5 |
| Other Fish and Game Advice | 5 |
| Lead in Fishing Tackle and Bullets | 5 |
| Good Sanitary Practices - Bacteria, Viruses and Parasites in Fish and Game | 5 |
| Advice on Eating Raw or Partially Cooked Fish, Shellfish and Other Meats | 6 |
| Deformed or Abnormal Fish | 6 |
| Botulism in Fish and Waterfowl | 6 |
| Rabies and Chronic Wasting Disease (CWD) | 6 |
| 2006-2007 Health Advisories | 8 |
| Additional Advice | 22 |
| Maps of Waters with Specific Fish Consumption Advisories | 19 and 20 |
| Map of New York City Harbor Region | 21 |
| Map of New York Marine Waters | 22 |
| Information on Chemicals in Sportfish and Game | 23 |
| PCBs | 23 |
| Mercury | 23 |
| Chlordane, DDT, Dieldrin and Mirex | 24 |
| Dioxins and Furans | 24 |
| Cadmium | 24 |
| Contacts for Additional Information | 25 |

These advisories are also available from the New York State Department of Health web site at:
<http://www.health.state.ny.us/nysdoh/fish/fish.htm>

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BTSA@health.state.ny.us.

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2006-2007 Health Advisories: Chemicals in Sportfish and Game

Purpose and Rationale

The New York State Department of Health (DOH) issues advisories on eating sportfish and game because some of these foods contain chemicals at levels that may be harmful to health. The advisories tell people which fish and game to avoid and how to reduce their exposures to contaminants in the fish and game that they do eat. These advisories are for sportfish and game that people take and are not for fish and game sold in markets. The health advisories are (1) general advice on sportfish taken from waters in New York State; (2) advice on sportfish caught in specific New York State waterbodies; and (3) advice on eating New York State game.

Fish and game can be nutritious and good to eat. Fish are an important source of protein and are low in saturated fat. Naturally occurring fish oils lower plasma cholesterol and triglycerides and may have other health benefits.

However, contaminated fish and game can be the main source of exposure to some contaminants. People can get the health benefits of fish and reduce their exposures to unwanted contaminants by following the advisories in this booklet.

Health Risks from Contaminants in Fish and Game

Long-lasting contaminants, such as PCBs, DDT and cadmium, build up in your body over time. Health problems that may result from the contaminants found in fish or game range from small changes in health that are hard to detect to birth defects and cancer. Mothers who eat highly contaminated fish and game before becoming pregnant may have increased risk of having children who are slower to develop and learn. This advisory is also intended to protect children from these potential developmental problems. Women beyond their childbearing years and men face fewer health risks from contaminants than children do. People in this last group should follow the advisory to reduce other types of health risks.

Some contaminants cause cancer in animals. We cannot predict with certainty your risks of cancer from eating contaminated fish or game. Cancer currently affects about one in every three people, primarily due to smoking, diet and hereditary risk factors. Exposure to some contaminants in the fish and game you eat may not increase your cancer risk at all. If you follow this advisory over your lifetime, you will minimize your exposure and reduce whatever cancer risk is associated with these contaminants.

The primary contaminants of concern in New York State fish are mercury and PCBs. Other contaminants such as cadmium, chlordane, DDT, dieldrin, dioxin and mirex are also concerns in fish from some of the State's water bodies. The primary contaminants of concern in waterfowl are PCBs, mirex, chlordane and DDT; and PCBs are the main concern in snapping turtles. More information about the chemicals that have led to advisories in New York State sportfish and game and potential health effects can be found on page 23.

Procedures for Setting Advisories

In New York State, these advisories are primarily based on information that the Department of Environmental Conservation (DEC) gathers on contaminant levels in fish and game. DEC collects fish samples each year from different water bodies. In a typical year, DEC collects approximately 2000 fish from more than 50 locations/waters and analyzes these fish for various contaminants. Sampling focuses on water bodies with known or suspected contamination, water bodies susceptible to mercury contamination, popular fishing waters and waters where trends in fish contamination are being monitored. Also, testing focuses on those species that are most likely to be caught and eaten by sport anglers. DEC also tests some game species (e.g., waterfowl, snapping turtles) that accumulate chemical contaminants.

DOH annually reviews the new DEC testing results for fish and game to determine if an advisory should be issued or revised for a given water body or fish or game species. When reviewing the data, DOH compares testing data to federal marketplace standards (when available) for a contaminant and considers other factors such as potential human exposures and health risks; location, type and number of samples, etc.

Advice on Contaminants in Fish

General Advisory for Eating Sportfish

The general health advisory for sportfish is that you eat no more than one meal (one-half pound) per week of fish taken from the state's

General Advisory - eat no more than one meal (one-half pound) per week of fish taken from the state's freshwaters and some marine waters at the mouth of the Hudson River.

freshwaters and some marine waters at the mouth of the Hudson River.

These include the New York waters of the Hudson River, Upper Bay of New York Harbor (north of Verrazano Narrows Bridge), Arthur Kill, Kill Van Kull, Newark Bay, Raritan Bay west of Wolfe's Pond Park,

Harlem River and the East River to the Throgs Neck Bridge (see map on page 21). DOH issues this advice because:

- some chemicals are commonly found in New York State fish (mercury and PCBs for example),
- fish from all waters have not been tested and
- fish may contain unidentified contaminants.

Specific Advisories

Fish from more than 130 water bodies in New York have contaminant levels that are greater than federal standards. For these waters, DOH recommends either limiting or not eating a specific kind of fish (see pages 8 to 18). In

some cases, enough information is available to issue advisories based on the length of the fish. Older (larger) fish are often more contaminated than younger (smaller) fish.

Advisories for Women, Infants and Children

DOH offers health advice for infants, children under the age of 15 and women of childbearing age.

DOH recommends

that these groups not eat any fish from the specific waterbodies listed in the advisory.

The reason for this specific advice is that chemicals may have a greater effect on developing organs in young children or in the unborn child. They also build up in women's bodies and are often passed on in mother's milk. Waters that have specific advisories have at least one species of fish with an elevated contaminant level, which means that other fish species may also be affected.

DEC has completed much of a large study that will increase our knowledge about mercury in fish from New York State waters. Preliminary information about mercury levels in the Adirondack and Catskill Mountain regions suggest that larger, older individuals of pickerel, northern pike, smallmouth and largemouth bass, walleye and yellow perch often have relatively high levels of mercury in their flesh, higher levels than similar fish from other regions in the state. Because of this, infants, children under 15 and women of childbearing age should avoid these fish from Adirondack and Catskill Mountain waters. Consult the box on page 3.

In addition, due to concerns about mercury contamination, the U.S. Food and Drug Administration (FDA) advises pregnant women, women who may become pregnant, nursing mothers and young children to eat no shark, swordfish, king mackerel or tilefish. FDA notes that seafood can be an important part of a healthy diet, and advises pregnant women,

Women, infants and children should not eat any fish from listed waters

| Regional Advice for Women and Children Adirondack and Catskill Waters |
|---|
| Lower Mercury Levels – Eat no more than one meal per week: Brook, brown and rainbow trout Bullhead Bluegill/sunfish Rock bass Crappie Yellow perch less than 10 inches |
| Higher Mercury Levels – EAT NONE: Northern pike Pickerel Walleye Largemouth and smallmouth bass Yellow perch longer than 10 inches |

women who may become pregnant and nursing mothers to eat up to 12 ounces per week of a variety of other kinds of fish. FDA also recommends that parents follow these same recommendations when feeding fish and shellfish to their young children, but serve smaller portions. The full FDA advisory, including answers to frequently asked questions about mercury in fish and shellfish, can be found at:

<http://www.cfsan.fda.gov/~dms/admehg3.html>

For further information about the risks of mercury in fish and shellfish call the U.S. Food and Drug Administration's consumer information line toll-free at 1-888-INFO-FDA.

Spacing Fish Meals

If you eat fish from a waterbody with an EAT NO MORE THAN ONE MEAL PER MONTH advisory, for one month you should not eat any more fish that have an EAT NO MORE THAN ONE MEAL PER MONTH advisory for the same contaminant. For example, if you eat a

meal of Koppers Pond carp, for one month you should not eat American eel from Kinderhook Lake since both of these fish species have EAT NO MORE THAN ONE MEAL PER MONTH advisories and both are based on PCB contamination. The advisory table (pages 8 to 18) lists chemical contaminants of concern for each advisory.

DOH Advisories for Marine Waters

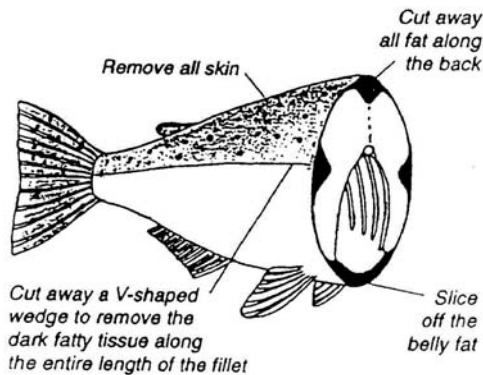
DOH has specific and general advisories for the Hudson River Estuary, the Upper Bay of New York Harbor, Arthur Kill, Kill Van Kull, Newark Bay, Raritan Bay west of Wolfe's Pond Park and the East and Harlem Rivers (see Table on pages 8 through 18). DOH also issues specific advisories for the New York waters of Long Island Sound, Block Island Sound, Peconic/Gardiners Bays, the Lower Bay of New York Harbor, Raritan Bay east of Wolfe's Pond Park, Jamaica Bay and other Long Island south shore waters (see maps on pages 21 and 22). These apply to striped bass, bluefish and American eels and are the only advisories that apply to these waters. Ocean fish, although tested less often, are generally less contaminated than freshwater fish. However, striped bass, bluefish and eels have specific habits or characteristics that make them more likely to have contaminants than other marine species (see page 22).

DOH strongly recommends that you not eat the soft "green stuff" (mustard, tomalley, liver or hepatopancreas) found in the body section of crabs and lobsters from any waters because cadmium, PCBs and other contaminants concentrate there. Because contaminants in this substance are transferred to cooking liquid, you should also discard crab or lobster cooking liquid.

**Don't eat crab or
lobster tomalley
(hepatopancreas)**

Cleaning and Cooking Your Fish

PCBs, dioxin, mirex, DDT, chlordane and dieldrin are found at higher levels in the fat of fish. You can reduce the amount of these contaminants in a fish meal by properly trimming, skinning and cooking your catch. Remove the skin and trim all the fat from the belly flap, the line along the sides, the fat along the back and under the skin (see the diagram below).



Cooking or soaking fish cannot eliminate the contaminants, but heat from cooking melts some of the fat in fish and allows some of the contaminated fat to drip away. Broil, grill or bake the trimmed, skinned fish on a rack so that the fat drips away. Do not use drippings to prepare sauces or gravies.

These precautions are particularly valuable when preparing fish from waters with advisories due to PCBs, dioxin, mirex, DDT, chlordane and dieldrin; see pages 8 through 18. These precautions will not reduce the amount of mercury or other metals. Mercury is distributed throughout a fish's muscle tissue (the part you eat), rather than in the fat and skin. The only way to reduce mercury intake is to eat less contaminated fish.

Reducing Exposure to Chemical Contaminants From Fish and Shellfish

Although eating fish has health benefits, fish with high contaminant levels should be avoided. You can benefit from eating the fish you catch and can minimize your contaminant intake by following these general recommendations:

1. Choose sportfish from waterbodies that are not listed on pages 8 through 18 and follow the advice in this booklet.
2. When deciding which sportfish to eat, choose smaller fish, consistent with DEC regulations, within a species since they may have lower contaminant levels. Older (larger) fish within a species may be more contaminated because they have had more time to accumulate contaminants in their bodies.
3. To reduce exposures to mercury, avoid or eat less largemouth and smallmouth bass, northern pike, pickerel, walleye and larger yellow perch (e.g., longer than 10 inches) because these fish tend to have higher mercury levels.
4. To reduce exposures to PCBs, dioxin, mirex, DDT, chlordane and dieldrin, avoid or eat less American eel, bluefish, carp, lake trout, striped bass, white and channel catfish, and white perch because these fish tend to have higher levels of these contaminants.
5. When preparing sportfish, use a method of filleting the fish that will reduce the skin, fatty material and dark meat. These parts of the fish contain many of the contaminants.
6. When cooking sportfish, use cooking methods (broiling, poaching, boiling and baking) which allow contaminants from the fatty portions of fish to drain out. Pan-frying is not recommended. The cooking liquids and fat drippings of fish from contaminated waters should be discarded since these liquids contain contaminants.
7. Do not eat the soft "green stuff" (mustard, tomalley, liver or hepato-pancreas) found in the body section of crab and lobster. This tissue can contain high levels of chemical contaminants, including PCBs, dioxin and heavy metals.
8. Anglers who want to enjoy the fun of fishing but who wish to eliminate the potential risks associated with eating contaminated sportfish may want to consider "catch and release" fishing. Refer to the *DEC New York State Fishing Regulations Guide* for suggestions on catch and release fishing techniques.

Advice on Contaminants in Game

DOH also issues advisories about eating some game. These are on page 22 of this booklet and include advisories for eating snapping turtles and waterfowl statewide because they contain PCBs and other contaminants. Because these contaminants concentrate in fat, you can minimize your exposure by not eating fat from these game and by following the cooking and eating advice on page 4.

Other Fish and Game Advice

Lead in Fishing Tackle and Bullets

Lead can cause health problems when it builds up in the body. Because the unborn baby and young child are at the greatest risk, it is particularly important for pregnant women, women of childbearing age and young children to minimize their lead exposures. Lead poisoning can slow a child's physical growth and mental development and can cause behavior and other nervous system problems, reproductive problems, kidney and liver damage, blindness and even death in both adults and children. Fishing tackle (especially sinkers and jig heads), bullets and shot often contain lead. To reduce exposure to the lead in these products, you should:

- Keep all lead objects away from young children (young children often put their hands and objects in their mouth).
- Wash hands with soap and water after holding or using lead sinkers and jig heads or reloading lead bullets or shot.
- Never put lead sinkers in your mouth. This includes biting down on lead sinkers.
- Never eat, drink, or smoke immediately after handling lead sinkers, bullets or shot; wash hands first.
- Take proper precautions when melting lead and pouring sinkers or bullets at home. Use jacketed bullets (a jacketed bullet is a bullet enveloped in a casing of another material such as copper) and shotgun shells with plastic wads.

Consider non-lead alternatives:

- DEC encourages anglers to use non-lead alternatives for sinkers and jig heads to

reduce the risk of lead poisoning to birds.

New York State law prohibits the sale of lead fishing sinkers (including "split shot") weighing one-half ounce or less. More information is provided on the DEC website: [http://www.dec.state.ny.us/website/dfwmr/fish/respangl.html#non toxic](http://www.dec.state.ny.us/website/dfwmr/fish/respangl.html#non%20toxic).

- The use of lead shot for waterfowl hunting is prohibited in New York State, and waterfowl hunters are required to use DEC-approved non-lead shot alternatives. You may want to consider using non-lead shot alternatives to hunt other small game as well. Remove all bullets, slugs, shot, lead fragments and affected meat (including feathers, fur, debris, etc.) from game when preparing it for consumption. Studies indicate that lead shot can contaminate game meat. Thus, people who eat game harvested with lead shot may be exposed to lead. More information on lead shot alternatives is provided on the DEC website at <http://www.dec.state.ny.us/website/dfwmr/wildlife/guide/migbregs.html#ntshot>.

Studies have shown that people can be exposed to lead from shooting at indoor and outdoor firing ranges. For additional information on how to minimize your exposure to lead, call 1-800-458-1158, ext. 27900 (toll free).

Good Sanitary Practices - Bacteria, Viruses and Parasites in Fish and Game

Fish and game and other meats can be contaminated with bacteria, viruses or parasites that can cause illness. You should harvest fish and game that act and look healthy, and follow good sanitary practices when preparing them. We recommend that you wear rubber or plastic protective gloves while filleting, field dressing, skinning or butchering. We also recommend that you remove intestines soon after harvest, don't eat intestines and avoid direct contact with intestinal contents. Hands, utensils and work surfaces should be washed before and after handling any raw food, including fish and game meat. Fish and game should be kept cool (with ice or refrigerated below 45°F or 7°C) until filleted or butchered and then should be refrigerated or frozen. Some hunters prefer to hang big game for several days before butchering; this should not be done unless the game can be kept at temperatures consistently

below 45°F. Fish and other seafood should be cooked to an internal temperature (in the thickest part) of 140°F (60°C); game birds and other types of wild game meat should be cooked to an internal temperature (in the thickest part) of 165°F (74°C).

Advice on Eating Raw or Partially Cooked Fish, Shellfish and Other Meats

Foods of animal origin, such as pork, poultry, beef, dairy products, eggs, fish and shellfish, can be contaminated with bacteria, viruses or parasites that can cause illness. Persons at high risk (for example, those who are immunocompromised, suffer from liver disease or other chronic diseases) can be more susceptible to and more severely affected by these infectious diseases. This is why we recommend that all of these foods be thoroughly cooked before eating. Government agencies and the food industry strive to minimize contamination of raw animal foods and provide healthful food products.

Call DEC at (631) 444-0475 for information on shellfish regulations, including areas in which clam, oyster and mussel collection are permitted. DEC routinely tests clam, oyster and mussel beds for bacteria. Based on these tests, an area may be closed to clam, oyster and mussel harvesting. You can check the DEC website at <http://www.dec.state.ny.us/website/dfwmmarine/shellfish/index.html> for general information on shellfish harvest. Call DEC at (631) 444-0480 for the latest information on emergency closures.

Deformed or Abnormal Fish

The health implications of eating deformed or abnormal fish are unknown. Any obviously diseased fish (marked by tumors, lesions or other abnormal condition of the fish skin, meat or internal organs) should be discarded.

Botulism in Fish and Waterfowl

In recent years, large numbers of some species of Lake Erie fish and waterfowl have been found dead, sick and dying, many of them as a result of botulism poisoning. The botulism poison is produced by *Clostridium botulinum*, a bacterium that is common in the environment and can produce harmful levels of botulism

poison under some conditions. This poison has been found in some of the affected fish and waterfowl. The botulism poison can cause illness and death if eaten by humans or animals. Cooking may not destroy the botulism poison. This problem may also occur in other waters, and we don't know whether all or only some fish and waterfowl species can be affected. DEC continues to monitor and investigate this problem.

No human cases of botulism poisoning have been linked to these events. However, as a precaution, do not eat any fish or game if they are found dead or dying, act abnormally or seem sick. If you must handle dead or dying fish, birds or other animals, cover your hands with disposable rubber or plastic protective gloves or a plastic bag.

Rabies and Chronic Wasting Disease (CWD)

Rabies and Chronic Wasting Disease (CWD) are two diseases that can cause abnormal behavior in deer. Rabies can be found in any mammal (especially raccoons, bats, skunks and foxes) and is found only occasionally in New York State deer. Chronic Wasting Disease (CWD) is a disease of deer and elk. In 2005, CWD was found for the first time in captive and wild white-tailed deer in New York State. This disease has been present for several years in some deer or elk from several Western and mid-Western states and some Canadian provinces.

Rabies is a viral infection which causes a rapidly progressive disease of the animal's nervous system that leads to paralysis and death, usually within several days after signs of the disease first appear. Rabid deer may seem to lose their normal fear of humans, appear to have injured hind legs, salivate excessively, or be found laying on the ground struggling. Rabies can be transmitted from infected mammals to humans by exposure to infected tissues, particularly nervous tissue and saliva. Treatment can prevent rabies from developing in exposed humans. Rabies is almost always fatal in exposed humans who develop the disease. Thorough cooking will inactivate the rabies virus (see "Good Sanitary Practices" on page 5 of this booklet), but meat from infected game should not be eaten. Hunters should be aware that deer with rabies might have symptoms similar to CWD.

CWD is a brain infection of deer and elk that leads to loss of body functions, poor body condition and abnormal behavior such as staggering or very poor posture. It eventually leads to the death of the animal. CWD appears to be caused by abnormal, infectious proteins called prions. There is currently no evidence that CWD is linked to disease in people. Cooking does not destroy the CWD prion.

The following precautions are recommended to minimize the risk of transmission of infectious diseases when handling or processing animals:

- Do not handle or eat deer or other game that appear sick, act strangely, or are found dead.
- Wear rubber or latex gloves when field dressing game.
- Avoid handling or cutting through the skull or spinal cord. Use separate dedicated knives, saws and cutting boards to butcher deer, particularly if you cut through the spinal cord or skull (such as when removing antlers). Do not use regular kitchen utensils. Wash thoroughly with soap and water any knives, butchering tools, work surfaces, hands and any other part of the body that has been exposed to animal tissue, blood, urine or feces. Equipment should then be rinsed with boiling (212 degree Fahrenheit) water or sanitized with a chemical sanitizer.
- As an additional precaution against CWD, you can soak cleaned knives and tools for one hour in a fresh solution of household chlorine bleach (unscented) mixed with an equal amount of water (e.g., 1 quart bleach with 1 quart of water), air dry, then rinse with clean water. Wipe down cleaned counters and other surfaces with the bleach solution and allow them to air dry.
- Warning: When handling bleach, wear rubber or latex gloves and avoid getting bleach in eyes or on skin or clothing. If bleach contacts eyes, skin, or clothing, immediately wash affected area with water and remove affected clothing. Make sure that enough fresh air is available because bleach may cause eye, nose, or throat irritation.
- Should you decide to take the skull cap (e.g., with antlers), make sure to thoroughly clean the skull cap, utensils and work surfaces with bleach solution, as described above.
- Avoid handling the brain and spinal tissues or fluids, saliva and mouth parts of game animals. If these tissues or fluids are handled, wash hands thoroughly with soap and water. If these tissues or fluids make contact with a person's eyes, nose, mouth, or fresh open breaks in a person's skin, contact the local health department to see if rabies exposure may have occurred and whether the animal should be tested for rabies.
- If possible, request that the meat from your deer be processed separately, without adding other hunters' deer meat.
- The brain, spinal cord and other nervous tissue, spleen, pancreas, eyes, tonsils, and lymph nodes of game may have CWD prions, and additional organs (liver, kidney, heart and salivary glands) may pose a risk of infection for a number of diseases. Normal field dressing will eliminate most of these organs and tissues. Lymph nodes can be eliminated by boning out the meat and carefully trimming the fat and connective tissue. Although no current evidence links CWD to human health, out of an abundance of caution, we recommend that people not consume a known or suspect CWD positive animal.

For additional information about CWD and rabies, visit the NYS Department of Health Website at:

<http://www.health.state.ny.us/nysdoh/zoonoses/zoonoses.htm>

For an update on CWD testing in New York State and for information on wild deer, visit the NYS Department of Environmental Conservation Website at:

<http://www.dec.state.ny.us/website/dfwmr/wildlife/deer/cwd.html>

For information on captive deer, visit the NYS Department of Agriculture and Markets Website at: <http://www.agmkt.state.ny.us/Al/cwd.html>

2006-2007 Health Advisories

The following recommendations are based on contaminant levels in fish and game. To minimize potential adverse health impacts, the DOH recommends:

- Eat no more than one meal (one-half pound) per week of fish from the state's freshwaters, the Hudson River Estuary, Upper Bay of New York Harbor (north of the Verrazano Narrows Bridge), Arthur Kill, Kill Van Kull, Newark Bay, Raritan Bay west of Wolfe's Pond Park, East River to the Throgs Neck Bridge and Harlem River, except as recommended below.
- Women of childbearing age, infants and children under the age of 15 should not eat any fish species from waters listed below.
- Follow trimming and cooking advice.
- Observe the following restrictions on eating fish from these waters and their tributaries to the first barrier impassable by fish.
- Advice for other marine waters is on page 22.
- The following advisories apply to New York State portions of listed waters. If you fish in portions of waters in another state, consult that state's fish advisories, available from state health or environmental agencies, or on the internet at: <http://epa.gov/waterscience/fish/states.htm>

| Water (County) | Species | Recommendations | Chemical(s) of Concern |
|---|---|-------------------------------------|------------------------|
| Amawalk Reservoir [110] (Westchester) | Largemouth and smallmouth bass over 16" | Eat no more than one meal per month | Mercury |
| Arthur Kill [120] (Richmond) | See Newark Bay | | |
| Ashokan Reservoir [44] (Ulster) | Smallmouth bass over 16" and walleye | Eat no more than one meal per month | Mercury |
| Barge Canal [3] Tonawanda Creek, Lockport to Niagara River (Erie & Niagara) | Carp | Eat no more than one meal per month | PCBs |
| Beaver Lake [84] (Lewis) | Chain pickerel | Eat no more than one meal per month | Mercury |
| Big Moose Lake [89] (Herkimer) | Yellow perch over 9 inches | Eat no more than one meal per month | Mercury |
| Blue Mountain Lake [98] (Hamilton) | Largemouth bass over 15" and smallmouth bass over 15" | Eat no more than one meal per month | Mercury |
| Bog Brook Reservoir [53] (Putnam) | Walleye over 21 inches | Eat no more than one meal per month | Mercury |
| Boyd's Corner Reservoir [51] (Putnam) | Largemouth bass over 16" and walleye | Eat no more than one meal per month | Mercury |

Waters with changes from the 2005-2006 Health Advisories are underlined.
Numbers in brackets refer to map on page 20 or 21.

| Water (County) | Species | Recommendations | Chemical(s) of Concern |
|---|---|-------------------------------------|-------------------------------|
| Breakneck Pond [108] (Rockland) | Largemouth bass over 15" | Eat no more than one meal per month | Mercury |
| Buffalo River/Harbor [6] (Erie) | Carp | Eat none | PCBs |
| Canada Lake [24] (Fulton) | Smallmouth bass over 15" and chain pickerel | Eat no more than one meal per month | Mercury |
| Canadice Lake [10] (Ontario) | Lake trout over 25" and brown trout | Eat no more than one meal per month | PCBs |
| Cannonsville Reservoir [31] (Delaware) | Smallmouth bass over 15" and yellow perch | Eat no more than one meal per month | Mercury |
| Carry Falls Reservoir [64] (St. Lawrence) | Walleye | Eat no more than one meal per month | Mercury |
| Cayuga Creek [2] (Niagara) | All species | Eat none | Dioxin |
| Chase Lake [25] (Fulton) | Yellow perch over 9" | Eat no more than one meal per month | Mercury |
| Chenango River [28] | Walleye over 22" | Eat no more than one meal per month | Mercury |
| Chodikey Lake [48] (Ulster) | Largemouth bass over 15" | Eat no more than one meal per month | Mercury |
| Cranberry Lake [73] (St. Lawrence) | Smallmouth bass | Eat no more than one meal per month | Mercury |
| Crane Pond [106] (Essex) | Smallmouth bass over 15" | Eat no more than one meal per month | Mercury |
| Cross River Reservoir [112] (Westchester) | Largemouth and smallmouth bass over 16" | Eat no more than one meal per month | Mercury |
| Dart Lake [88] (Herkimer) | Yellow perch over 10" | Eat no more than one meal per month | Mercury |
| Delaware Park Lake [5] (Erie) | Carp | Eat no more than one meal per month | PCBs |
| Diverting Reservoir [55] (Putnam) | Walleye | Eat no more than one meal per month | Mercury |
| Dunham Reservoir [37] (Rensselaer) | Walleye | Eat none | Mercury |
| | Smallmouth bass | Eat no more than one meal per month | Mercury |
| <u>Dyken Pond</u> [38] (Rensselaer) | Largemouth bass | Eat no more than one meal per month | Mercury |
| East Branch Reservoir [54] (Putnam) | Walleye | Eat no more than one meal per month | Mercury |

Waters with changes from the 2005-2006 Health Advisories are underlined.

Numbers in brackets refer to map on page 19 or 20.

Please note the special advice for **women of childbearing age, infants and children under the age of 15** on page 8

| Water (County) | Species | Recommendations | Chemical(s) of Concern |
|--|--|-------------------------------------|-------------------------------|
| East River [116] (NYC) | American eel and gizzard shad | Eat none | PCBs |
| | Atlantic needlefish, bluefish, rainbow smelt, striped bass and white perch | Eat no more than one meal per month | PCBs |
| | Blue crab | See Hudson River south of Catskill | |
| East Stoner Lake [22] | See Middle Stoner Lake | | |
| Effley Falls Reservoir [78](Lewis) | Chain pickerel and smallmouth bass | Eat no more than one meal per month | Mercury |
| Eighteen Mile Creek [4] (Niagara) | All species | Eat none | PCBs |
| Elmer Falls Reservoir [77] (Lewis) | Smallmouth bass | Eat no more than one meal per month | Mercury |
| Ferris Lake [20] (Hamilton) | Yellow perch over 12" | Eat none | Mercury |
| | Smaller yellow perch | Eat no more than one meal per month | Mercury |
| Forked Lake [93] (Hamilton) | Largemouth and smallmouth bass | Eat no more than one meal per month | Mercury |
| Fourth Lake [100] (Herkimer & Hamilton) | Lake trout | Eat none | DDT |
| Francis Lake [83] (Lewis) | Yellow perch over 9" and chain pickerel | Eat no more than one meal per month | Mercury |
| Franklin Falls Flow (Pond) [68] (Essex and Franklin) | Walleye | Eat none | Mercury |
| Freeport Reservoir [129] (Nassau) | Carp | Eat no more than one meal per month | Chlordane |
| Fresh Pond [135] (Hither Hills State Park, Suffolk) | Largemouth bass over 15" | Eat no more than one meal per month | Mercury |
| Goodyear Lake [32] (Otsego) | Walleye over 22" | Eat no more than one meal per month | Mercury |
| Grant Park Pond [125] (Nassau) | Carp | Eat no more than one meal per month | PCBs |
| Grasse River [61] Mouth to Massena Power Canal (St. Lawrence) | All species | Eat none | PCBs |
| Great Sacandaga Lake [26] (Fulton and Saratoga) | Smallmouth bass and walleye | Eat no more than one meal per month | Mercury |

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Please note the special advice for **women of childbearing age, infants and children under the age of 15** on page 8

| Water (County) | Species | Recommendations | Chemical(s) of Concern |
|--|---|-------------------------------------|------------------------|
| Halfmoon Lake [82] (Lewis) | Yellow perch | Eat no more than one meal per month | Mercury |
| Hall's Pond [124] (Nassau) | Carp and goldfish | Eat none | Chlordane |
| Harlem River [115] (NYC) | American eel and gizzard shad | Eat none | PCBs |
| | Atlantic needlefish, bluefish, rainbow smelt, striped bass and white perch | Eat no more than one meal per month | PCBs |
| | Blue crab | See Hudson River south of Catskill | |
| Herrick Hollow Creek [33] (Delaware) | Brook trout | Eat no more than one meal per month | PCBs |
| High Falls Pond [76] (Lewis) | Smallmouth bass over 15" | Eat no more than one meal per month | Mercury |
| Hoosic River [36] (Rensselaer) | Brown trout over 14" | Eat no more than one meal per month | PCBs |
| <u>Hudson River</u> [27, 42 & 109] | | | |
| -Corinth Dam to Dam at Route 9 Bridge in South Glens Falls | Smallmouth bass over 14" | Eat no more than one meal per month | Mercury |
| -Sherman Island Dam downstream to Feeder Dam at South Glens Falls | Carp | Eat no more than one meal per month | PCBs |
| Catch and release fishing <u>only</u> in the Hudson River (and tributaries to the first barrier impassable by fish) between Bakers Falls (in the Village of Hudson Falls) and the Troy Dam, per NYS Department of Environmental Conservation regulations. | | | |
| -Dam at Route 9 Bridge in South Glens Falls to Troy Dam | All species | Eat none | PCBs |
| -Troy Dam south to bridge at Catskill | All species except Alewife, American shad, blueback herring, rock bass and yellow perch | Eat none | PCBs |
| | Alewife, blueback herring, rock bass and yellow perch | Eat no more than one meal per month | PCBs |
| | American shad (general advisory) | Eat no more than one meal per week | PCBs |
| - Bridge at Catskill south to the Battery in New York City | Channel catfish, gizzard shad and white catfish | Eat none | PCBs |

(continued on next page)

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Please note the special advice for **women of childbearing age, infants and children under the age of 15** on page 8

| Water (County) | Species | Recommendations | Chemical(s) of Concern |
|--|---|---|-------------------------------|
| <u>Hudson River</u> - Bridge at Catskill south to the Battery in New York City (continued) | American eel, Atlantic needlefish, bluefish, brown bullhead, carp, goldfish, largemouth bass, smallmouth bass, rainbow smelt, striped bass, walleye and white perch | Eat no more than one meal per month | PCBs |
| | Blue crab | Eat no more than six crabs per week | PCBs, Cadmium, Dioxin |
| | -hepatopancreas | Eat none | PCBs, Cadmium, Dioxin |
| | -cooking liquid | Discard | PCBs, Cadmium, Dioxin |
| -Dobbs Ferry south to Greystone | American eel | Eat none | PCBs |
| | Other species | See advisories for Hudson River south of Catskill | |
| Indian Lake [63] (Lewis) | All species | Eat no more than one meal per month | Mercury |
| Irondequoit Bay [8] (Monroe) | Carp | Eat none | PCBs, Mirex |
| Keuka Lake [11] (Yates & Steuben) | Lake trout over 25" | Eat no more than one meal per month | DDT |
| <u>Kill Van Kull</u> [119] (Richmond) | See Newark Bay | | |
| Kinderhook Lake [41] (Columbia) | American eel | Eat no more than one meal per month | PCBs |
| Kings Flow [104] (Hamilton) | Smallmouth bass over 15" | Eat no more than one meal per month | Mercury |
| Koppers Pond [14] (Chemung) | Carp | Eat no more than one meal per month | PCBs |
| Lake Capri [133] (Suffolk) | American eel and carp | Eat no more than one meal per month | Chlordane, Cadmium |
| Lake Champlain [75] -Whole Lake | Lake trout over 25" and walleye over 19" | Eat no more than one meal per month | PCBs, Mercury |
| -Bay within Cumberland Head to Crab Island | Brown bullhead | Eat none | PCBs |
| | American eel and yellow perch | Eat no more than one meal per month | PCBs |

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| Water (County) | Species | Recommendations | Chemical(s) of Concern |
|--|---|-------------------------------------|------------------------|
| Lake Durant and Rock Pond , Town of Indian Lake [99] (Hamilton) | Largemouth bass over 15" | Eat no more than one meal per month | Mercury |
| Lake Eaton [94] (Hamilton) | Yellow perch over 10" and smallmouth bass | Eat no more than one meal per month | Mercury |
| Lake Ontario [9] | American eel, channel catfish, carp, lake trout over 25", brown trout over 20" and chinook salmon | Eat none | PCBs, Mirex, Dioxin |
| | White sucker, rainbow trout, smaller lake trout, smaller brown trout and coho salmon over 25" | Eat no more than one meal per month | PCBs, Mirex, Dioxin |
| -West of Point Breeze | White perch | Eat none | PCBs, Mirex, Dioxin |
| -East of Point Breeze | White perch | Eat no more than one meal per month | PCBs, Mirex, Dioxin |
| Lincoln Pond [107] (Essex) | Largemouth bass over 15" | Eat no more than one meal per month | Mercury |
| Loch Sheldrake [47] (Sullivan) | Walleye | Eat no more than one meal per month | Mercury |
| Loft's Pond [127] (Nassau) | Carp and goldfish | Eat no more than one meal per month | Chlordane |
| Long Lake [95] (Hamilton) | Northern pike | Eat no more than one meal per month | Mercury |
| Long Pond, Town of Croghan [79] (Lewis) | Splake over 12" | Eat none | Mercury |
| Lower Saranac Lake [71] (Franklin) | Smallmouth bass over 15" | Eat no more than one meal per month | Mercury |
| Lower and Upper Sister Lakes [91] (Hamilton) | Yellow perch over 10" | Eat none | Mercury |
| Upper Massapequa Reservoir [131] (Nassau) | White perch | Eat no more than one meal per month | Chlordane |
| Massena Power Canal [60] (St. Lawrence) | Smallmouth bass | Eat no more than one meal per month | PCBs |
| Meacham Lake [65] (Franklin) | Yellow perch over 12" and smallmouth bass | Eat none | Mercury |
| | Northern pike and smaller yellow perch | Eat no more than one meal per month | Mercury |

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| Water (County) | Species | Recommendations | Chemical(s) of Concern |
|--|--|-------------------------------------|-------------------------------|
| Middle Stoner Lake (or East Stoner Lake) [22] (Fulton) | Smallmouth bass over 15" | Eat no more than one meal per month | Mercury |
| Mohawk River [16] Between Oriskany and West Canada Creeks (Oneida & Herkimer) | Carp | Eat none | PCBs |
| | Largemouth bass and tiger muskellunge | Eat no more than one meal per month | PCBs |
| Moshier Reservoir [87] (Herkimer) | Smallmouth bass and yellow perch | Eat no more than one meal per month | Mercury |
| Nassau Lake [40] (Rensselaer) | All species | Eat none | PCBs |
| Neversink Reservoir [45] (Sullivan) | Brown trout over 24" and smallmouth bass | Eat no more than one meal per month | Mercury |
| Newark Bay [117] (Richmond) | American eel, gizzard shad, striped bass and white perch | Eat none | Dioxin and PCBs |
| | Atlantic needlefish, bluefish and rainbow smelt | Eat no more than one meal per month | PCBs |
| | Blue crab | See Hudson River south of Catskill | PCBs, Cadmium, Dioxin |
| New York Harbor [118] | See Upper Bay of NY Harbor (page 18) and marine waters advice (page 22) | | PCBs |
| Niagara River [1] | | | |
| -Above Niagara Falls | Carp | Eat no more than one meal per month | PCBs |
| -Below Niagara Falls | American eel, channel catfish, carp, lake trout over 25", brown trout over 20", chinook salmon and white perch | Eat none | PCBs, Mirex, Dioxin |
| | White sucker, rainbow trout, smallmouth bass, smaller lake trout, smaller brown trout and coho salmon over 25" | Eat no more than one meal per month | PCBs, Mirex, Dioxin |
| North Lake [101], Town of Ohio (Herkimer) | Yellow perch | Eat no more than one meal per month | Mercury |

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| Water (County) | Species | Recommendations | Chemical(s) of Concern |
|---|---|-------------------------------------|-------------------------------|
| North-South Lake [43] (Greene) | Largemouth bass over 15" | Eat no more than one meal per month | Mercury |
| Onondaga Lake [13] (Onondaga) | Walleye | Eat none | Mercury |
| | Carp, channel catfish and white perch | Eat no more than one meal per month | Dioxin, PCBs, Mercury |
| | All other species | Eat no more than one meal per month | Mercury |
| <u>Osgood Pond</u> [69] (Franklin) | Smallmouth bass | Eat no more than one meal per month | Mercury |
| Oswego River [56] | | | |
| -Mouth to Oswego power dam | See Lake Ontario | | |
| Oswego power dam to upper dam at Fulton (Oswego) | Channel catfish | Eat no more than one meal per month | PCBs |
| Pepacton Reservoir [34] (Delaware) | Brown trout over 24", smallmouth bass over 15" and yellow perch | Eat no more than one meal per month | Mercury |
| <u>Pine Lake</u> [23] (Fulton) | Largemouth bass | Eat no more than one meal per month | Mercury |
| Polliwog Pond [70] (Franklin) | Smallmouth bass | Eat no more than one meal per month | Mercury |
| <u>Raquette Lake</u> [92] (Hamilton) | Largemouth bass | Eat no more than one meal per month | Mercury |
| <u>Raritan Bay West of Wolfe's Pond Park</u> [121] | White perch | Eat none | PCBs, dioxin |
| | Striped bass | Eat no more than one meal per month | PCBs |
| | Blue crab | See Hudson south of Catskill | |
| Red Lake [62] (Jefferson) | Walleye | Eat no more than one meal per month | Mercury |
| Ridders Pond [122] (Nassau) | Goldfish | Eat none | Chlordane |
| Rio Reservoir [50] (Orange & Sullivan) | Smallmouth bass over 15" | Eat no more than one meal per month | Mercury |

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| Water (County) | Species | Recommendations | Chemical(s) of Concern |
|---|--|-------------------------------------|-------------------------------|
| Rock Pond and Lake Durant [99], Town of Indian Lake (Hamilton) | Largemouth bass over 15" | Eat no more than one meal per month | Mercury |
| Rondout Reservoir [46] (Sullivan & Ulster) | Smallmouth bass over 16" | Eat no more than one meal per month | Mercury |
| Round Pond [103] Town of Long Lake (Hamilton) | Yellow perch over 12' | Eat no more than one meal per month | Mercury |
| <u>Rushford Lake</u> [7] (Allegany) | Walleye | Eat no more than one meal per month | Mercury |
| Russian Lake [90] (Hamilton) | Yellow perch over 9" | Eat no more than one meal per month | Mercury |
| <u>Sacandaga Lake</u> [102] (Hamilton) | Smallmouth bass | Eat no more than one meal per month | Mercury |
| St. James Pond [132] (Suffolk) | All species | Eat no more than one meal per month | Chlordane, DDT |
| St. Lawrence River [59] -Whole river | American eel, channel catfish, lake trout over 25", carp, brown trout over 20" and chinook salmon | Eat none | PCBs, Mirex, Dioxin |
| | White perch, white sucker, rainbow trout, smaller lake trout, smaller brown trout and coho salmon over 25" | Eat no more than one meal per month | PCBs, Mirex, Dioxin |
| -Bay at St. Lawrence/ Franklin Co. line | All species | Eat none | PCBs |
| Salmon River [57] Mouth to Salmon Reservoir (Oswego) (also see Lake Ontario) | Smallmouth bass | Eat no more than one meal per month | PCBs, Mirex |
| Salmon River Reservoir [58] (Oswego) | Largemouth and smallmouth bass | Eat no more than one meal per month | Mercury |
| Sand Lake [19], Town of Arietta (Hamilton) | Chain pickerel | Eat no more than one meal per month | Mercury |
| Sauquoit Creek [17] Between Old Silk Mill Dam (near New Hartford/Paris town line) and Mohawk River (Oneida) | Brown trout | Eat none | PCBs |

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| Water (County) | Species | Recommendations | Chemical(s) of Concern |
|--|--|-------------------------------------|-------------------------------|
| Saw Mill River [113] (Westchester) | American eel | Eat no more than one meal per month | Chlordane |
| Schoharie Reservoir [35] (Delaware, Greene and Schoharie) | Smallmouth bass over 15" and walleye over 18" | Eat none | Mercury |
| | Smaller smallmouth bass and walleye | Eat no more than one meal per month | Mercury |
| Schroon Lake [105] (Warren & Essex) | Lake trout over 27", yellow perch over 13" and smallmouth bass | Eat no more than one meal per month | PCBs, Mercury |
| Sheldrake River [114] (Westchester) | American eel | Eat none | Chlordane, Dieldrin |
| | Goldfish | Eat no more than one meal per month | Chlordane |
| Skaneateles Creek [12] From dam at Skaneateles to Seneca River (Onondaga) | Brown trout over 10" | Eat no more than one meal per month | PCBs |
| Smith Pond – Rockville Centre [126] (Nassau) | White perch | Eat no more than one meal per month | Chlordane |
| Smith Pond – Roosevelt Park [128] (Nassau) | American eel | Eat none | Chlordane |
| | Carp and goldfish | Eat no more than one meal per month | Chlordane |
| Soft Maple Dam Pond [80] and Soft Maple Reservoir [81] (Lewis) | Rock bass and smallmouth bass | Eat no more than one meal per month | Mercury |
| South Pond [96], Town of Long Lake (Hamilton) | Yellow perch over 10" | Eat no more than one meal per month | Mercury |
| Spring Pond – Middle Island [134] (Suffolk) | Carp and goldfish | Eat none | Chlordane |
| Spy Lake [18] (Hamilton) | Smallmouth bass over 15" | Eat no more than one meal per month | Mercury |
| Stillwater Reservoir [86] (Herkimer) | Yellow perch over 9", smallmouth bass and splake | Eat no more than one meal per month | Mercury |
| Sunday Lake [85] (Herkimer) | Chain pickerel | Eat none | Mercury |
| | Yellow perch | Eat no more than one meal per month | Mercury |

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| Water (County) | Species | Recommendations | Chemical(s) of Concern |
|--|---|-------------------------------------|-------------------------------|
| Susquehanna River [29] | Walleye over 22" | Eat no more than one meal per month | Mercury |
| Swinging Bridge Reservoir [49] (Sullivan) | Walleye | Eat no more than one meal per month | Mercury |
| Threemile Creek [15] (Oneida) | White sucker | Eat no more than one meal per month | PCBs |
| Titicus Reservoir [111] (Westchester) | White perch | Eat no more than one meal per month | Mercury |
| Tupper Lake [74] (Franklin & St. Lawrence) | Smallmouth bass and walleye | Eat no more than one meal per month | Mercury |
| Unadilla River [30] | Walleye over 22" | Eat no more than one meal per month | Mercury |
| <u>Union Falls Flow (Pond)</u> [67] (Clinton & Franklin) | Northern pike and smallmouth bass | Eat no more than one meal per month | Mercury |
| Upper and Lower Sister Lakes [91] (Hamilton) | Yellow perch over 10" | Eat none | Mercury |
| <u>Upper Bay of New York Harbor</u> [118] (north of Verrazano Narrows Bridge) | Gizzard shad and white perch | Eat none | PCBs |
| | Atlantic needlefish, bluefish, American eel, rainbow smelt and striped bass | Eat no more than one meal per month | PCBs |
| | Blue crab | See Hudson River south of Catskill | |
| <u>Upper Chateaugay Lake</u> [66] (Clinton) | Smallmouth bass over 15" | Eat no more than one meal per month | Mercury |
| Upper Twin Pond [130] (Nassau) | American eel | Eat no more than one meal per month | Chlordane |
| Valatie Kill [39] Between County Rt. 18 and Nassau Lake (Rensselaer) | All species | Eat none | PCBs |
| Weller Pond [72] (Franklin) | Northern pike | Eat no more than one meal per month | Mercury |
| West Branch Reservoir [52] (Putnam) | Walleye | Eat no more than one meal per month | Mercury |
| Whitney Park Pond [123] (Nassau) | Carp and goldfish | Eat no more than one meal per month | Chlordane |
| Willis Lake [21] (Hamilton) | Smallmouth bass | Eat no more than one meal per month | Mercury |
| <u>Woods Lake</u> [97] (Hamilton) | Smallmouth bass over 15" | Eat no more than one meal per month | Mercury |

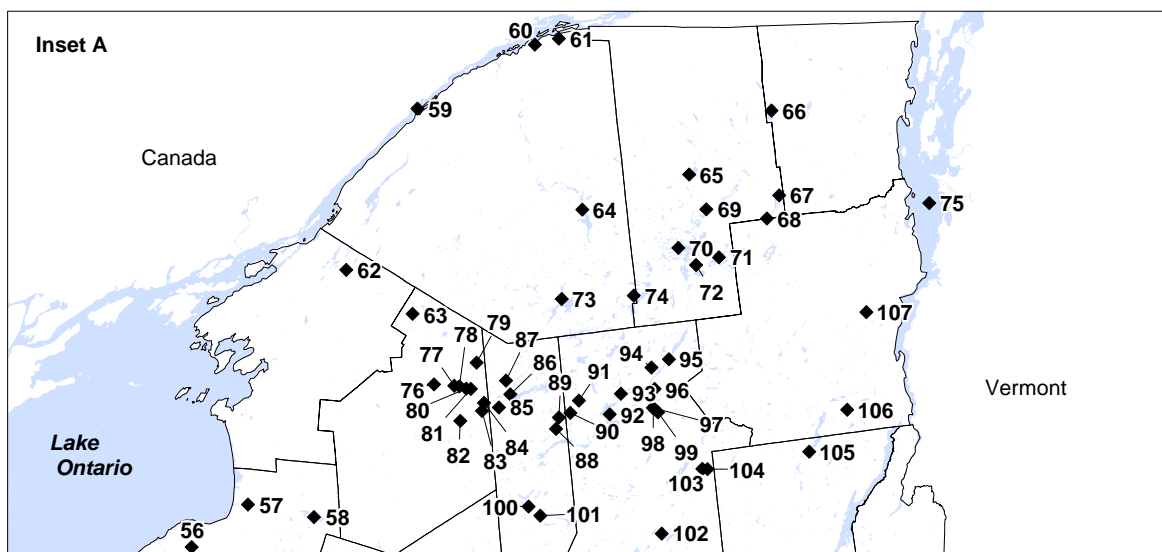
Waters with changes from the 2005-2006 Health Advisories are underlined.

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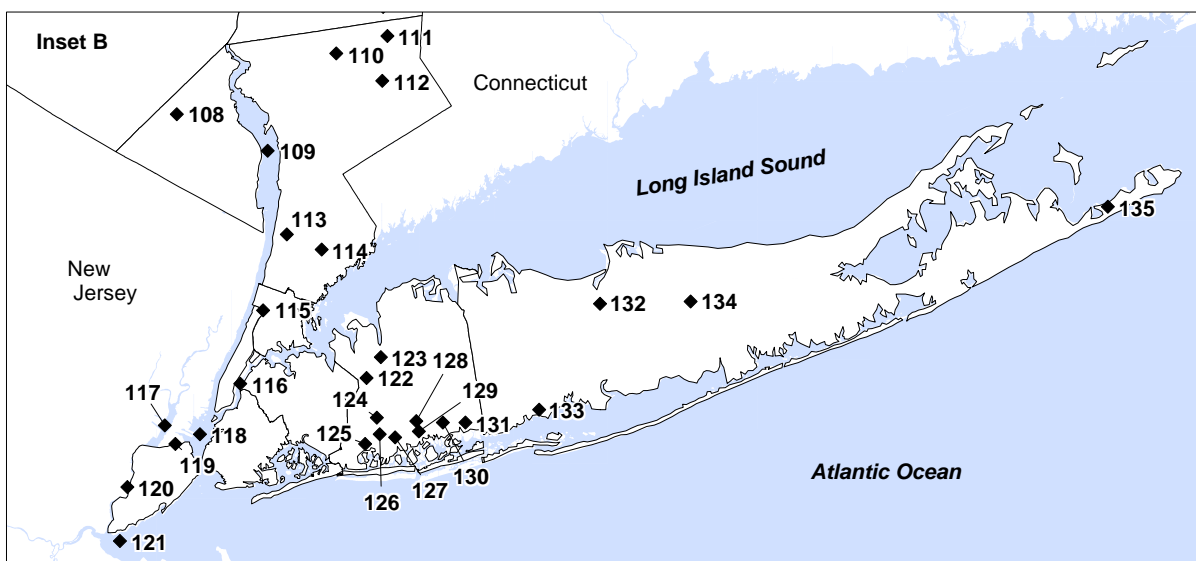
Please note the special advice for **women of childbearing age, infants and children under the age of 15** on page 8

Waters with Specific Fish Consumption Advisories 2006



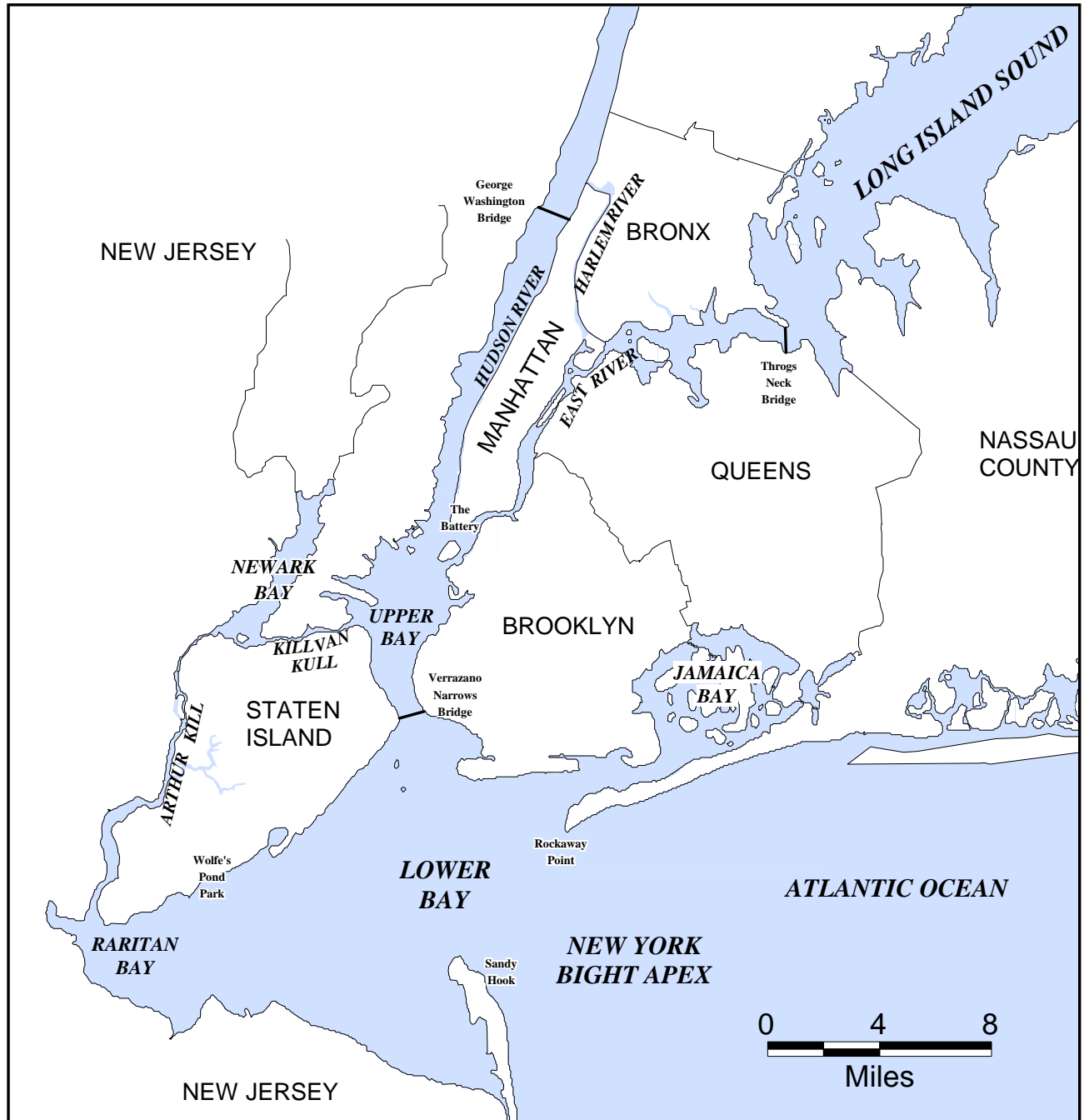


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|---------------------------|---------------------------|---------------------------------|------------------------------|
| 56 Oswego River | 69 Osgood Pond | 82 Halfmoon Lake | 95 Long Lake |
| 57 Salmon River | 70 Polliwog Pond | 83 Francis Lake | 96 South Pond |
| 58 Salmon River Reservoir | 71 Lower Saranac Lake | 84 Beaver Lake | 97 Woods Lake |
| 59 St. Lawrence River | 72 Weller Pond | 85 Sunday Lake | 98 Blue Mountain Lake |
| 60 Massena Power Canal | 73 Cranberry Lake | 86 Stillwater Reservoir | 99 Rock Pond and Lake Durant |
| 61 Grasse River | 74 Tupper Lake | 87 Moshier Reservoir | 100 Fourth Lake |
| 62 Red Lake | 75 Lake Champlain | 88 Dart Lake | 101 North Lake |
| 63 Indian Lake | 76 High Falls Pond | 89 Big Moose Lake | 102 Sacandaga Lake |
| 64 Carry Falls Reservoir | 77 Elmer Falls Reservoir | 90 Russian Lake | 103 Round Pond |
| 65 Meacham Lake | 78 Effley Falls Reservoir | 91 Upper and Lower Sister Lakes | 104 Kings Flow |
| 66 Upper Chateaugay Lake | 79 Long Pond (Croghan) | 92 Raquette Lake | 105 Schroon Lake |
| 67 Union Falls Pond | 80 Soft Maple Dam Pond | 93 Forked Lake | 106 Crane Pond |
| 68 Franklin Falls Pond | 81 Soft Maple Reservoir | 94 Lake Eaton | 107 Lincoln Pond |



- | | | |
|---------------------------|-----------------------------------|---------------------------------|
| 108 Breakneck Pond | 118 New York Harbor | 127 Loft's Pond |
| 109 Hudson River | 119 Kill Van Kull | 128 Smith Pond (Roosevelt Park) |
| 110 Amawalk Reservoir | 120 Arthur Kill | 129 Freeport Reservoir |
| 111 Titicus Reservoir | 121 Raritan Bay | 130 Upper Twin Pond |
| 112 Cross River Reservoir | 122 Ridders Pond | 131 Upper Massapequa Reservoir |
| 113 Saw Mill River | 123 Whitney Park Pond | 132 St. James Pond |
| 114 Sheldrake River | 124 Hall's Pond | 133 Lake Capri |
| 115 Harlem River | 125 Grant Park Pond | 134 Spring Pond (Middle Island) |
| 116 East River | 126 Smith Pond (Rockville Centre) | 135 Fresh Pond |
| 117 Newark Bay | | |

Map of New York City Harbor Region



Additional Advice

Advisories for Lake Erie - Due to PCBs, women of childbearing age, infants and children under 15 are advised to eat no more than one meal per week of chinook salmon less than 19 inches, burbot, freshwater drum, lake whitefish, rock bass and yellow perch and to EAT NO MORE THAN ONE MEAL PER MONTH of all other fish from Lake Erie. Other people should eat no more than one meal per week of any Lake Erie fish species.

Marine Bluefish and Eels - The general advisory {Eat no more than one meal (one-half pound) per week} applies to bluefish and American eels but not to most other fish (see Marine Striped Bass below) from Long Island Sound, Block Island Sound, Peconic/Gardiners Bays, the Lower Bay of New York Harbor, Raritan Bay east of Wolfe's Pond Park, Jamaica Bay and other Long Island south shore waters. (Contaminant - PCBs)

Marine Striped Bass - Women of childbearing age and children under the age of 15 should eat no striped bass from Upper and Lower Bays of New York Harbor, Raritan Bay or Long Island Sound west of Wading River. Other people should EAT NO MORE THAN ONE MEAL PER MONTH of striped bass from these waters. Everyone should eat no more than one meal per week of striped bass taken from Jamaica Bay, Eastern Long Island Sound, Block Island Sound, Peconic/Gardiners Bay or Long Island south shore waters. (Contaminant - PCBs)

Crabs and Lobsters - The hepatopancreas ("green stuff", sometimes called mustard, tomalley or liver) found in the body section of crabs and lobsters should not be eaten because it has high contaminant levels. Because contaminants in the hepatopancreas are

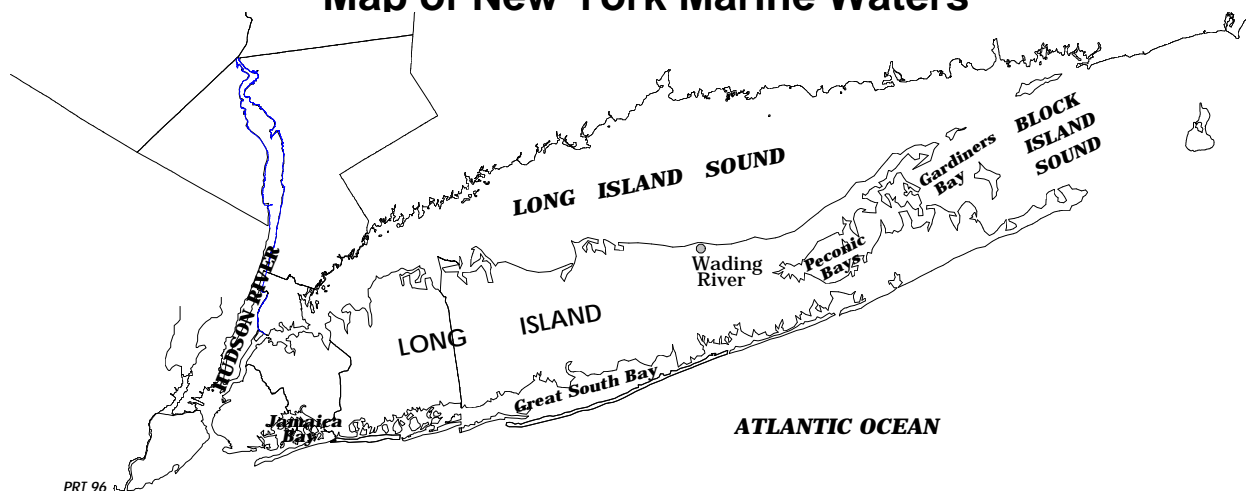
transferred to cooking liquid, crab or lobster cooking liquid should also be discarded. (Contaminants - PCBs, cadmium, dioxin).

Hudson River American Shad - The advisory for women of childbearing age, infants and children under 15 is EAT NONE for all fish from the lower Hudson River because of PCB contamination. American shad have lower PCB levels than other species. A few meals of Hudson River American shad meat and roe, especially using cooking and trimming methods to minimize PCB content, would not pose an unacceptable health risk for women of childbearing age and children, assuming this is their only significant exposure to PCBs.

Snapping Turtles - Snapping turtles retain contaminants in their fat, liver, eggs and, to a lesser extent, muscle. If you choose to consume snapping turtles, you can reduce your exposure by carefully trimming away all fat and discarding the fat, liver and eggs prior to cooking the meat or preparing soup. Women of childbearing age, infants and children under the age of 15 should AVOID EATING snapping turtles or soups made with their meat. (Contaminant - PCBs)

Wild Waterfowl - Mergansers are the most heavily contaminated waterfowl species and should NOT BE EATEN. EAT NO MORE THAN TWO MEALS PER MONTH of other wild waterfowl; you should skin them and remove all fat before cooking, and discard stuffing after cooking. Wood ducks and Canada geese are less contaminated than other wild waterfowl species and diving ducks are more contaminated than dabbling ducks. (Contaminants - PCBs, mirex, chlordane, DDT)

Map of New York Marine Waters



Information on Chemicals in Sportfish and Game

Most of what we know about the potential health effects of these chemicals comes from high-dose laboratory animal studies or in people exposed by accidents or in the workplace. Chemicals that cause health effects in laboratory animals and people after high level exposures may also increase the risk of effects in people exposed to lower levels for long periods of time.

For information on how to reduce your exposures to contaminants in fish see page 4; and for information on how to reduce your exposures from snapping turtles and waterfowl see page 22.

The following write-ups provide some basic information on the chemicals that have been found in sportfish and game in New York State.

PCBs

PCBs (polychlorinated biphenyls) are a family of man-made chemicals that were used in many commercial and electrical products until their manufacture was banned in the mid-1970s. PCBs are persistent in the environment and accumulate in the fat of fish and other animals. Thus, PCBs still remain a fish contaminant.

Health concerns: Studies of women and their children show a link between elevated levels of PCBs in their bodies and slight effects on their children's birth weight, short-term memory and learning ability. A study of older adults (49-86 years old) who ate fish containing PCBs suggest that higher PCB exposure is associated with decreased memory and learning. Other studies have suggested a link between increased PCB exposure and effects on the human reproductive system, including changes in sperm quality, time to pregnancy and menstrual cycles. These studies suggest that the effects were caused by PCBs, but other factors may have played a role too. Studies of workers exposed to PCBs raise concerns that these chemicals can cause cancer in people, but the information is not adequate to prove that this is the case.

Mercury

Mercury is a metal that occurs naturally in the environment and can also get into the environment from human activity. Most of the mercury that accumulates in fish is an organic form called methylmercury. Fish that live longer and eat other fish tend to have more methylmercury than do smaller fish.

Health concerns: Methylmercury can cause effects on the nervous system. Exposure to methylmercury is more of a concern for children and unborn babies because their nervous systems are still developing. People who ate fish that contained large amounts of methylmercury had permanent damage to the brain, kidneys and fetus. Some recent research on populations that eat a large amount of fish finds that methylmercury can affect children's memory, attention and language development. Other research on a different population that also eats large amounts of fish has not found such effects.

Chlordane, DDT, Dieldrin and Mirex

Chlordane, DDT, dieldrin and mirex are all man-made organochlorine chemicals that were once used as insecticides. Mirex was also used as a flame retardant in a number of materials. Although these chemicals have been banned in the United States since the 1970s (with the exception that chlordane and dieldrin were allowed for termite control until the 1980s), they are very persistent in the environment and accumulate in the fat of fish and other animals. Thus, these chemicals can still be found as fish contaminants.

Health concerns: Chlordane, DDT, dieldrin and mirex can cause effects on the nervous system and the liver in laboratory animals. Chlordane, DDT and dieldrin have also caused effects on the nervous system of people. Some of these chemicals can also cause effects on the kidneys, the thyroid gland and on reproduction in animals and people. The levels of exposure that caused these effects are typically much higher than would likely occur from eating fish containing these chemicals. Chlordane, DDT, dieldrin and mirex also caused cancer in laboratory animals exposed to high levels over their lifetimes. Whether these chemicals cause cancer in people is not known.

Dioxins and Furans

Dioxins (polychlorinated dibenzo-p-dioxins or PCDDs) and **furans** (polychlorinated dibenzofurans or PCDFs) are two closely related families of chemicals. Some dioxins and furans are unwanted by-products of manufacturing and also come from the smoke or ash of motor vehicles, municipal waste incinerators, wood fires and trash burning. Dioxins and furans are very persistent in the environment and accumulate in the fat of fish and other animals. Thus, these chemicals are fish contaminants.

Health concerns: Most of what we know about dioxins and furans come from one particular dioxin, but many of these chemicals are likely to cause similar health effects. Dioxins and furans have been associated with causing skin effects as well as changes in reproductive hormone levels and indicators of liver function in people. Weaker evidence suggests that these chemicals can also cause a number of other health effects in people. Such effects include an association between a mother's exposure and effects on her child's nervous system, hormone levels and immune system. Some dioxins have been shown to cause cancer in laboratory animals exposed to high levels of the chemicals throughout their lifetime. Some evidence suggests that people exposed to dioxins, as well as other chemicals at the same time, have developed cancer.

Cadmium

Cadmium is a naturally-occurring metal found in small amounts in soil and water. Cadmium is used in many industrial operations and in consumer products such as paints, plastics and batteries. Cadmium also occurs in foods (especially fruits, vegetables and cereals) and tobacco. Cadmium can also be found in fish and shellfish from some waters.

Health concerns: Cadmium accumulates in the body, mainly in the kidneys, with continued exposure. Some people with long-term cadmium exposure have had effects on their kidneys, bones and blood.

Contacts for Additional Information

New York State Department of Health

For more information on **health effects** from exposure to chemical contaminants or to provide comments on the format or content of this report contact:

Environmental Health Information: 1-800-458-1158, extension 27815 (toll-free). Calls are taken from 8:00AM-4:30PM, Monday through Friday. After hours, leave a voice mail message. The full advisories are also available from the Internet at:

<http://www.nyhealth.gov/nydoh/fish/fish.htm>

or can be requested by e-mail at:

BTSA@health.state.ny.us

New York State Department of Environmental Conservation

For more information on **fishing inland waters**, contact:

Region 1

Loop Road
Bldg. 40 SUNY
Stony Brook, NY 11790
(631) 444-0280

Region 4

65561 State Hwy. 10
Suite One
Stamford, NY 12167-9503
(607) 652-7366

Region 7

1285 Fisher Avenue
Cortland, NY 13045-1090
(607) 753-3095, ext.213

Region 2

1 Hunter Point Plaza
47-40 21st Street
Long Island City, NY 11101-5407
(718) 482-4922

Region 5

1115 NYS Rt. 86
P.O. Box 296
Raybrook, NY 12977-0296
(518) 897-1333

Region 8

6274 E. Avon-Lima Road
Avon, NY 14414-9519
(585) 226-5343

Region 3

21 South Putt Corners Road
New Paltz, NY 12561-1696
(845) 256-3161

Region 6

317 Washington St.
Watertown, NY 13601-3787
(315) 785-2262

Region 9

270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7000 or 7010

For more information on **fishing marine waters**, contact:

Bureau of Finfish and Crustaceans
205 North Belle Mead Road, Suite 1
East Setauket, NY 11733
(631) 444-0435

For information on **contaminant levels** in fish, shellfish and wildlife, contact:

Division of Fish and Wildlife
625 Broadway, Fifth Floor
Albany, NY 12233-4756
(518) 402-8920

Prepared by

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Division of Environmental Health Assessment

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State of New York
George E. Pataki, Governor

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